The Department of Mechanical Engineering/College of Engineering and Applied Sciences
Stony Brook University

Mechanical Engineering Seminar

Faculty Candidate

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Lecture Title: Enhancing Performance and Functionality of Robotic and Microfluidic Devices Through Technology Crossovers

Monday, April 15, 2013 at 2PM, Room 173 Light Engineering Building

Abstract

The fields of bio-inspired microrobotics and microfluidics have mostly developed separately since their inception and have targeted different applications. However, these technologies do share similarities. They both involve centimeter to millimeter-sized devices with micro- to nano-scale features and thus require the same length-scale fabrication precision. The two fields have also benefited from design through rapid prototyping where the resulting prototyped structures have become uniquely functional devices in their own right. This talk briefly overviews the development of rapid prototyping fabrication techniques in both bio-inspired microrobotics and microfluidics through example structures that illustrate key processes. Examples of technology crossover between the fields will also be given which lead to the enhancement of functionality and performance of the resulting devices.

Biography

Ranjana Sahai received her Ph.D. degree in mechanical engineering from the University of California, Berkeley, in 2006. Following her doctorate, she was both a Marie Curie International Fellow and U. S. National Science Foundation Fellow with Scuola Superiore Sant'Anna and a Postdoctoral Fellow with the National Enterprise for NanoScience and NanoTechnology (NEST) at Scuola Normale Superiore in Pisa, Italy. She is currently with the Harvard Microrobotics Laboratory at Harvard University in Cambridge, MA. Her research interests include the areas of micro/nano-fabrication, biologically inspired robotics, microrobotics, microfluidics, and crossover technologies among these areas.

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